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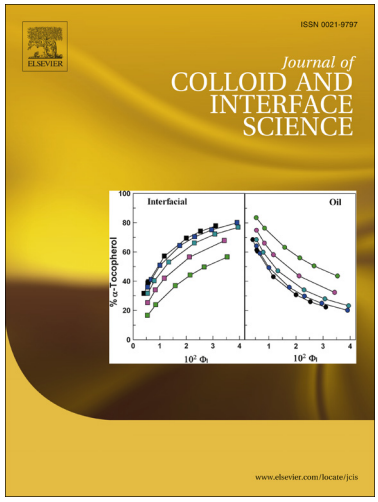

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Removal of methyl orange on modified ostrich bone waste-A novel organic-inorganic biocomposite

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Abstract

The synthesis and growth behavior of the chemically modified ostrich bone wastes as bioadsorbents for the removal of methyl orange from aqueous solutions have been investigated. The ostrich bone wastes were treated with cetyltrimethylammonium bromide (CTABr) and sodium dodecyl benzene sulfonate (SDBS). The synthesized biomaterials were characterized by several physicochemical techniques. The modified ostrich bone with CTABr was found to be effective as adsorbent for the removal of methyl orange (MO) from aqueous solutions. The effect of the experimental conditions on the adsorption behavior was studied by varying the contact time, initial MO concentration, temperature, initial pH, chemical modification process, and amount of adsorbent. The contact time to attain equilibrium for maximum adsorption (90%) was found to be 50 min. The adsorption kinetics of MO has been studied in terms of pseudo-first- and -second-order kinetics, and the Freundlich, Langmuir and Langmuir-

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